Wireless Appliance Manager
Model: ESM600 / ESM600U / ESM600A / ESM600FR / ESM600IT / ESM600AU

USER MANUAL

EN

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INTRODUCTION

Thank you for selecting the Wireless Appliance Manager (ESM600 / ESM600U / ESM600A / ESM600FR / ESM600IT/ ESM600AU).

The Wireless Appliance Manager embodies our commitment to environmental concerns. Aware of threats facing the world we live in, we have combined technological know-how, practicality and style to create this line of products that can help you reduce your carbon footprint.

The Wireless Appliance Manager measures the amount of energy used and calculates the running costs of household appliances. Equipped with a control timer, this product not only helps you identify which appliance has the highest energy consumption but also allows you to schedule its use, thereby saving your money as well as the environment.

Our aim is to make products that provide practical solutions while enabling you and us to fulfil our environmental responsibility. Together we can improve the world we live in.

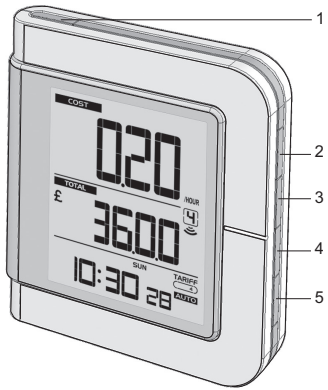
IMPORTANT

- Do not plug other energy meters with this product.
- For indoor use only.
- Place this product so that it is easily accessible to the power outlet.
- Do not plug on an electrical appliance where its current load exceeds 16 amps.
- Always ensure that the plug of any electrical appliance is fully inserted into the product's socket.
- If cleaning of the socket is required, disconnect from power and electrical appliance, and wipe with a dry cloth.

NOTE Please keep this manual handy as you use your new product. It contains practical step-by-step instructions, as well as technical specifications and warnings you should know about.

OVERVIEW

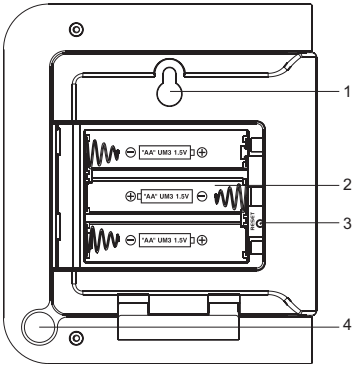
MAIN UNIT – FRONT VIEW



1. ⏻ **REMOTE**: remotely turn on/off socket or activate control timer (**AUTO**); enter settings for socket control timer

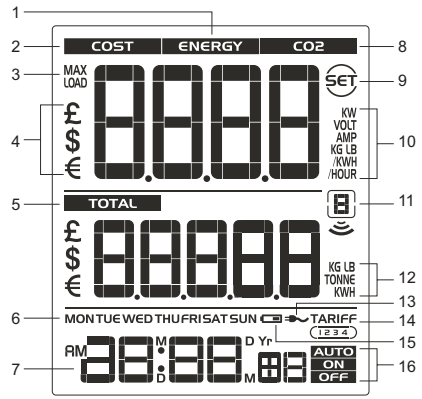
2. **MODE**: toggle between different mode displays; display secondary data in energy mode; confirm setting values and exit settings
3. **CH**: toggle through displays of different appliances (1-4); initiate / stop auto-toggle
4. ▲ **SET**: enter setting mode; increase value of the setting
5. **SEARCH** ▼: initiate search for remote socket; decrease value of the setting

MAIN UNIT - BACK VIEW



1. Wall mount hole
2. Battery compartment
3. **RESET**: restarts unit
4. Adaptor socket

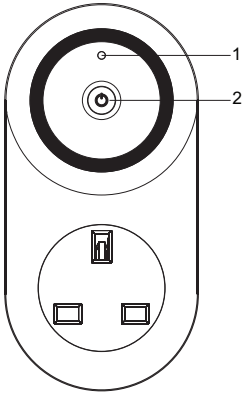
LCD DISPLAY



1. ENERGY: energy consumption is displayed
2. COST: cost of energy consumed is displayed
3. MAX: power usage alert; MAX LOAD: overload safety warning
4. Currency units – £ / $ / € (depending on country)
5. Accumulative cost / energy consumption / carbon emission since last reset is displayed
6. Days of the week
7. Clock / calendar
8. CO2: carbon emission is displayed
9. SET : unit is in setting mode
10. Cost / energy consumption / carbon emission measurement units

11. : indicates which electrical appliance's data is displayed (1-4)
12. Cost / energy consumption / carbon emission measurement units
13. : adaptor is connected
14. TARIFF 1 2 3 4: indicates at which pre-set rate electricity is charged
15. : main unit batteries low
16. AUTO / ON / OFF: socket is switched on/off (ON / OFF); socket control timer enabled (AUTO); tariff / socket control timer options when in setting mode

REMOTE SOCKET



1. LED status indicator: flashes when transmitting a reading or when searching for main unit
2. : cut off / resume power supply; manually force transmission to attempt link with main unit

NOTE Types of sockets used vary according to different country specification as listed in the table below.

Socket	Country	Voltage
	Germany	230V ~50Hz
	France	230V ~50Hz
	Italy	230V ~50Hz
	United Kingdom	240V ~50Hz
	United States	120V ~60Hz
	Australia	240V ~50Hz

This product can work with up to 4 remote sockets at any one time. Additional remote sockets can be purchased separately.

For more information, please contact your local retailer.*

* Features and accessories will not be available in all countries.

GETTING STARTED

REMOTE SOCKET SET UP

1. Plug the remote socket into a regular 230/240V (110/120V for the US) power outlet.
2. Plug in the electrical appliance you wish to use.
3. Press ⏻ to check that electricity flows through.

MAIN UNIT SET UP

1. Slide open the battery compartment cover.
2. Insert the batteries, matching the polarities (+/-).
3. Press **RESET** after each battery change.
4. Close the battery door.

Power adaptor (not included)

An adaptor can be used to power the unit. When connected to the main unit, will be displayed.

The main unit and adaptor should not be exposed to wet conditions. No objects filled with liquid, such as vases, should be placed on the main unit and adaptor.

SET TIME / DATE

The main unit will prompt you to set the date / time, continue by pressing the following buttons:

- ▲ **SET** to increase value or toggle options
- **SEARCH** ▼ to decrease value or toggle options
- **MODE** to confirm

The settings order is: 12/24 hour format, hour, minute, year, month format (day-month / month-day), month, day.

DATA TRANSMISSION

The main unit will automatically search for a signal after clock has been set or if 30 seconds elapsed without any input.

- Press and hold ⏻ on remote socket.

The remote socket reception icon will show the following status:

ICONS	MEANING
	Main unit is searching for remote socket
	A remote socket channel has been found
	No remote socket found

After finding the remote socket the icon will be continuously displayed. The search should take approximately 1 minute. There may be a slight delay between finding the remote socket and the data display of plugged-in appliance.

To search for another remote socket:

1. Press **CH**.
2. Press and hold ⏻ on the socket.

To return to default display (i.e., there are no further remote sockets):

- Press **MODE**.

To manually force link up (when previous attempt fails or to change a remote socket):

1. Press and hold **SEARCH** ▼ to initiate search.
2. Press **CH** repeatedly to assign a channel number.
3. Press and hold ⏻.

PLACING / MOUNTING MAIN UNIT

NOTE

- Distance between main unit and remote sockets should not exceed 100m (328 ft).
- Minimize obstructions such as doors, walls and furniture between the main unit and the remote socket.
- The transmission range may vary depending on many factors. You may need to experiment with various locations to get the best results.

To place on a horizontal surface, such as a desk:

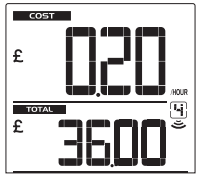
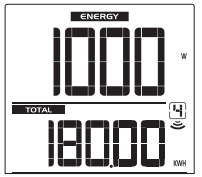
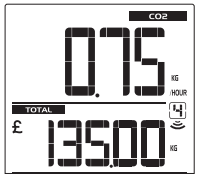
1. Remove plastic base stand from package.
2. Align tabs with slots located below the battery compartment.
3. Push and snap into place.

To mount onto a wall:

- Use the hole located at the back of the unit.

DISPLAY MODES

There are 3 display modes to choose from:

COST		Real time cost of electricity per hour Accumulated cost since last reset
ENERGY		Real time power (KW) Accumulated energy (KWh) consumed since last reset
CO2 (green-house gas)		Current green house gas emitted per hour Accumulated green house gas emitted since last reset

To toggle between data displays of appliances (up to 4):

- Press **CH**.

To auto-toggle displays of different appliances:

- Press and hold **CH**.

To deactivate auto-toggle function, press **CH**.

To toggle between cost / energy / CO_2 displays for a particular appliance:

- Press **MODE**.

To toggle between power (W) / current (A) / voltage (V) displays in energy mode:

1. Press **MODE** to toggle display until energy data is shown.
2. Press and hold **MODE** repeatedly.

UNDERSTANDING ELECTRICITY

Voltage (volts)	Electrical potential. Fixed at 220V-250V or 120V depending on country / region.
	x
Current (amps)	Amount of electricity flowing through, e.g., a wire.
	=
Power (watts)	Amount of energy being transferred. (KW = 1000W). This type of data is displayed on the top line of Energy mode.

KWh is a measure of consumption. Kilowatt hour represents the use of 1000W of electricity for 1 whole hour, which is equivalent to ten x 100W light bulbs operating at the same time for 1 hour.

Once cost rate of electricity has been inputted, the monitor can arrive at an estimated cost. Similarly, by inputting the carbon emission rate, the monitor can display the estimated amount of carbon emitted as a result of the electricity consumed.

NOTE This product is for educational purposes only. Its aim is to aid understanding of the cost of operating electrical appliances in the home. It does **not** replace your accurate electricity revenue meter.

SETTING - GENERAL

To enter settings, first ensure the corresponding mode is displayed on the screen.

Mode	Setting	Description
COST	Tariff	Up to 4 programmable tariffs
ENERGY	Power usage alert	Power consumption exceeds the amount appliance should be using
	Max. loading	Overload protection
CO2	Measurement unit	kg / lb
	CO_2 factor	The amount of carbon dioxide released to produce a unit of energy (KWh)

1. Press **MODE** to navigate to desired screen display.
2. Press and hold ▲ **SET** to enter settings.

TIP Press and hold **MODE** to exit settings (except when setting tariff).

TARIFF (COST RATE)

To determine the approximate cost of electricity consumption, input the cost per KWh. This rate can usually be found on the electricity bill.

This unit allows the input of up to 4 different tariffs (cost rate) to accommodate the different rates local utility companies may charge consumers depending on the hour electricity is consumed.

By raising awareness of consumption behaviour, better consumption habits may be adopted which will in turn reduce the cost of electricity bills.

To set cost rate:

1. Press **MODE** until COST is displayed.
2. Press and hold ▲ **SET** to enter.
3. Press **MODE** to enter TAR 1 setting.

Continue setting the options for all 4 tariff settings by pressing:

- ▲ **SET** to increase value or toggle options
- **SEARCH** ▼ to decrease value or toggle options
- **MODE** to confirm and move to next setting.

The setting options are: Tariff number (1-4); On/Off (except Tariff 1), days when tariff applies (everyday, weekday, weekend), start time for tariff (hour and minute), cost rate (1st to 4th digit), decimal point positioning.

NOTE If there is only one electricity rate select OFF for TAR 2-4.

POWER USAGE ALERT AND MAXIMUM LOADING

Power usage alert

Appliances use varying amounts of power to operate depending on its function and energy efficiency. This amount is written as W or KW and can be found on a label on the appliance.

As appliances age, their power consumption can go up quite considerably, thereby increasing the cost of operating it. By setting the power usage alert, this unit can alert you if the appliance is using more electricity than it should and help you consider if there's a need to replace it with an appliance that is more energy efficient.

Maximum loading

This safety feature is designed to protect you. Since current should be constant, a sudden jump in current (amps) indicates possible overloading which may be a result of appliance malfunction, power surge (e.g., from lightning) etc. The sensor will cut off power to the appliance to minimise the risk of short circuiting, damage to the appliance and even fire. The setting for maximum load varies across countries.

To set power alert and maximum loading:

1. Press **MODE** until ENERGY is displayed.
2. Press and hold ▲ **SET** to enter.
3. Set the 4 digits by pressing:
   - ▲ **SET** to increase value
   - **SEARCH** ▼ to decrease value
   - **MODE** to confirm and move to next digit.
4. Continue to set Max Loading (amp) by following step 3 above.

CO_2 RATE

Fossil fuel power stations produce carbon dioxide (CO_2) as a by-product of the production process. These gasses have been linked to climate change. The amount of carbon emitted is different for each utility company. For your convenience, a default carbon emission rate (per 1KWh of electricity produced) has been set on this unit.

To set the carbon emission rate:

1. Press **MODE** until CO2 is displayed.
2. Press and hold ▲ **SET** to enter.
3. Set the measurement unit by pressing ▲ **SET** to select unit, then **MODE** to confirm.

4. Continue to set the emission rate (3 digits) by pressing:
   - ▲ **SET** to increase value
   - **SEARCH** ▼ to decrease value
   - **MODE** to confirm and move to next setting.

REMOTE SOCKET CONTROL TIMER

Apart from monitoring energy consumption, this unit doubles as a timer control for up to 4 appliances at any time. Decide how long and when you want the appliance to work.

To set control timer:

1. Press **CH** repeatedly to select socket to be programmed.
2. Press and hold ⏻ **REMOTE** to enter settings.
3. Set the programme by pressing:
   - ▲ **SET** to increase value or toggle options
   - **SEARCH** ▼ to decrease value or toggle options
   - **MODE** to confirm and move to next setting.

The setting options are: applicable days (everyday, weekday, weekend), switch on time (hour and minute), switch off time (hour and minute).

To remotely turn on / off control timer or activate control timer program:

1. Press **CH** repeatedly to select channel.
2. Press ⏻ **REMOTE** to toggle between Auto, On, Off.

Icon	Meaning
AUTO	Socket switches on/off according to set times
ON	Socket continuously on
OFF	Socket continuously off

TRANSMISSION INTERVAL

For longer battery life, choose a longer data transmission interval.

To change the transmission interval:

1. Press and hold **MODE** and **CH** together.
2. Press ▲ **SET / SEARCH** ▼ to select interval (6 / 12 / 30/ 60 seconds).
3. Press **MODE** to confirm.

CLEAR RECORDS

"HI" will be displayed when the memory in the unit is full. Clear records so unit can continue monitoring and calculating the total data.

To clear records of TOTAL data (Cost / Energy / CO_2):

- Press and hold ▲ **SET** and **SEARCH** ▼ together.

RESET

Press **RESET** to restart the unit, main unit will search for the remote socket which was last linked up.

Press and hold **RESET** and **MODE** together to return to default settings.

TROUBLESHOOTING

PROBLEM	SYMPTOM	REMEDY
No display	Batteries / Adaptor	Check batteries have been correctly placed. If using adaptor, check connection.

"- - --" displayed	Not synch-ronised	Press **SEARCH** ▼ on the main unit then press and hold ⏻ on remote socket to attempt another link up.
"0.00" displayed	Appliance	Ensure appliance has been turned on. Press ⏻ on remote socket to cut off power. Reconnect appliance then press ⏻ to resume power.
Reading does not fluctuate	Appliance	Power consumption in some appliances can be very stable. Check figures in the row that displays Total data to see if it does change.
Strange readings	Strange / low / high readings	Check inputted cost rate / CO_2 rate
		Check appliances are not malfunctioning (turned off by itself) as this could be shown as a sudden drop in electricity usage.

SPECIFICATIONS

MAIN UNIT

Dimensions (L x W x H)	119 x 104 x 28.5mm (4.7 x 4.1 x 1.1 in)
Weight	150g (5.3 ounces) without batteries
Signal Frequency	2.4 GHz
Transmission range	100 meters (328 feet) unobstructed
Information update	6-30 seconds
Power	3 x UM-3 (AA) 1.5 V batteries 7.5V 600mA AC adaptor (not included)

REMOTE SOCKET

Dimensions (L x W x H)	128 x 64 x 46mm (5.0 x 2.5 x 1.8 in)
Weight	150g (5.3 ounces)
Power supply	240V AC 50 Hz or 120V AC 60 Hz
Maximum current	16A (varies according to different country specification)
Maximum load	3680W
Measure voltage range	100 - 250V AC
Measure current range	0.005 - 16A
Measure power range	0.1 - 3680W
Measure frequency range	45 - 65Hz
Operating temperature	-10°C to 40°C (14°F to 104°F)

PRECAUTIONS

- Do not subject the unit to excessive force, shock, dust, temperature or humidity.
- Do not cover the ventilation holes with any items such as newspapers, curtains etc.
- Do not immerse the unit in water. If you spill liquid over it, dry it immediately with a soft, lint-free cloth.
- Do not clean the unit with abrasive or corrosive materials.
- Do not tamper with the unit's internal components. This invalidates the warranty.
- Only use fresh batteries. Do not mix new and old batteries.
- Images shown in this manual may differ from the actual display.
- When disposing of this product, ensure it is collected separately for special treatment and not as household waste.
- Placement of this product on certain types of wood may result in damage to its finish for which Oregon Scientific will not be responsible. Consult the furniture manufacturer's care instructions for information.
- The contents of this manual may not be reproduced without the permission of the manufacturer.
- Do not dispose old batteries as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.
- Please note that some units are equipped with a battery safety strip. Remove the strip from the battery compartment before first use.
- Should there be any discrepancy between the English and other language versions, the English version shall apply and prevail.

NOTE The technical specifications for this product and the contents of the user manual are subject to change without notice.

NOTE Features and accessories will not be available in all countries. For more information, please contact your local retailer.

ABOUT OREGON SCIENTIFIC

Visit our website (www.oregonscientific.com) to learn more about Oregon Scientific products.

If you're in the US and would like to contact our Customer Care department directly, please visit:
https://us.oregonscientific.com/service/support.asp

For international inquiries, please visit:
https://us.oregonscientific.com/about/international.asp

EU DECLARATION OF CONFORMITY

Hereby, Oregon Scientific, declares that this Wireless Appliance Manager (Model: ESM600 / ESM600U / ESM600A / ESM600FR / ESM600IT / ESM600AU) is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC and 2006/95/EC. A copy of the signed and dated Declaration of Conformity is available on request via our Customer Service.

COUNTRIES RTTE APPROVED COMPLIED
All EU countries, Switzerland (CH)
and Norway (N)

FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

WARNING Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

DECLARATION OF CONFORMITY

The following information is not to be used as contact for support or sales. Please call our customer service number (listed on our website at www.oregonscientific.com), or on the warranty card for this product) for all inquiries instead.

We

Name:	Oregon Scientific, Inc.
Address:	19861 SW 95th Ave.,Tualatin, Oregon 97062 USA
Telephone No.:	1-800-853-8883

declare that the product

Product No.:	ESM600 / ESM600U / ESM600A / ESM600FR / ESM600IT / ESM600AU
Product Name:	Wireless Appliance Manager
Manufacturer:	IDT Technology Limited
Address:	Block C, 9/F, Kaiser Estate, Phase 1, 41 Man Yue St., Hung Hom, Kowloon, Hong Kong

is in conformity with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1) This device may not cause harmful interference, and 2) This device must accept any interference received, including interference that may cause undesired operation.